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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/185,248	11/03/1998	MARK E. EIDSON	INTL-0136-US	5197

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EXAMINER	
ARMSTRONG, ANGELA A	

ART UNIT	PAPER NUMBER
2654	

DATE MAILED: 07/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/185,248	EIDSON ET AL.	
	Examiner	Art Unit	
	Angela A. Armstrong	2654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 January 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,10,12 and 24-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,10,12 and 24-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1-4,10,12 and 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farhangi et al. (US Patent No. 5,647,008) in view of Bergher et al. ("Dolby AC-3™ and MPEG-2 Audio Decoder IC with 6-channels Output", IEEE Trans. on Consumer Electronics, August 1997) and Alexander (US Patent No. 6,259,957).

2. Regarding claim 1,

Receiving a first audio data stream in a first perceptually based format is taught by Farhangi et al. at Figure 2, col. 3, lines 9-67; col. 4, lines 1-61;

Receiving a second audio data stream is taught by Farhangi et al. at Figure 2, col. 3, lines 9-67 and col. 4, lines 1-61.

Farhangi et al. discloses receiving compressed data streams and decoding the data streams into a raw format, however they do not specifically teach that the received data is encoded in Dolby AC-3 or MPEG-2 format or that the raw format is pulse code modulated. Refer to Bergher et al. who teach an audio decoder that receives Dolby AC-3 and MPEG-2 data streams and decodes the data into pulse code modulated formats for use in US digital TV and HDTV, DVD, and general multimedia applications (Abstract; page 357; page 358).

Therefore, it would have been obvious to one of ordinary skill at the time of invention to modify the multimedia signal mixing system of Farhangi et al. to implement receiving Dolby AC-3 and MPEG-2 coded data and decode the data into a pulse code modulated format to allow for recovery of the original pulse code modulated data for use in general multimedia applications as suggested by Bergher et al., to allow for mixing the raw format signals with other raw format signals to produce combined output signals as suggested by Farhangi et al.

Mixing the first audio data stream with a second audio data stream is taught by Farhangi et al. at Figure 2, col. 3, lines 9-67; col. 4, lines 1-61. Farhangi et al do not specifically teach that the mixer is a pulse code modulated mixer. Refer to Alexander et al who teach a digital data processing system and method, which allows for mixing of PCM data (col. 8, lines 26-30), for the purpose for meeting the demand of increasingly sophisticated computer users for audio subsystems which produce high quality sound (col. 1, lines 51-53).

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to allow for PCM mixing as taught by Alexander et al, for the purpose of meeting the demand of increasingly sophisticated computer users for audio subsystems which produce high quality sound as suggested by Alexander et al.

Farhangi et al. teach transmitting the encoded combined audio data stream at col. 7, lines 18-21 for further processing or handling and they implement a CODEC on the receiving end of the system.

3. Regarding claims 2, 3 and 4, combining the first audio data stream with a second audio data stream is taught by Farhangi et al. at Figure 2, col. 3, lines 9-67; col. 4, lines 1-61. Farhangi et al discloses receiving compressed data streams and decoding or deformatting the data streams

into a raw format. Farhangi et al do not specifically teach that the raw format is linear pulse code modulated format. However, using linear pulse code modulation as a raw format for digital data is extremely well known and is commonly used in the art of speech and audio signal processing. Farhangi et al do not specifically teach the audio streams are combined using a linear pulse code modulated format. Alexander teaches digital data processing system and method, which allows for mixing of PCM data (col. 8, lines 26-30), for the purpose for meeting the demand of increasingly sophisticated computer users for audio subsystems which produce high quality sound (col. 1, lines 51-53).

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to allow for PCM mixing as taught by Alexander et al, for the purpose of meeting the demand of increasingly sophisticated computer users for audio subsystems which produce high quality sound as suggested by Alexander et al.

Farhangi et al. teaches encoding the combined signals at Figure 2, element 296. However they do not specifically teach encoding the combined data in an AC-3 or MPEG format. Refer to Bergher et al. who teach that AC-3 and MPEG compress signals into streams that provide reduced transmission bandwidth or recording area without audibly degrading the perceived quality.

Therefore, it would have been obvious to one of ordinary skill at the time of invention to modify the system of Farhangi et al. to encode the combined signals in either an AC-3 or MPEG format for the purpose of compressing the signal to achieve reduced transmission bandwidth or recording area without degrading the audio quality as taught by Bergher et al.

4. Regarding claim 10,

Combined audio data stream comprises a digital data stream is taught by Farhangi et al. at figure 2.

5. Regarding claim 12,

Receive a first audio data stream in a first perceptually based format is taught by Farhangi et al. at Figure 2, col. 3, lines 9-67; col. 4, lines 1-61;

Decode the first audio data stream is taught by Farhangi et al. at Figure 2, col. 3, lines 9-67; col. 4, lines 1-61;

Receive a second audio data stream is taught by Farhangi et al. at Figure 2, col. 3, lines 9-67 and col. 4, lines 1-61.

Farhangi et al. discloses receiving compressed data streams and decoding the data streams into a raw format, however they do not specifically teach that the received data is encoded in Dolby AC-3 or MPEG-2 format or that the raw format is pulse code modulated. Refer to Bergher et al. who teach an audio decoder that receives Dolby AC-3 and MPEG-2 data streams and decodes the data into pulse code modulated formats for use in US digital TV and HDTV, DVD, and general multimedia applications (Abstract; page 357; page 358).

Therefore, it would have been obvious to one of ordinary skill at the time of invention to modify the multimedia signal mixing system of Farhangi et al. to implement receiving Dolby AC-3 and MPEG-2 coded data and decode the data into a pulse code modulated format to allow for recovery of the original pulse code modulated data for use in general multimedia applications as suggested by Bergher et al., to allow for mixing the raw format signals with other raw format signals to produce combined output signals as suggested by Farhangi et al.

Combining a decoded first audio data stream with a second audio data stream is taught by Farhangi et al. at Figure 2, col. 3, lines 9-67; col. 4, lines 1-61.

Farhangi et al. teaches encoding the combined signals at Figure 2, element 296. However they do not specifically teach encoding the combined data in a perceptually based format. Refer to Bergher et al. who teach that perceptually based formats such as AC-3 and MPEG compress signals into stream that provides reduced transmission bandwidth or recording area without audibly degrading the perceived quality.

Therefore, it would have been obvious to one of ordinary skill at the time of invention to modify the system of Farhangi et al. to encode the combined signals in either a perceptually based format for the purpose of compressing the signal to achieve reduced transmission bandwidth or recording area without degrading the audio quality as taught by Bergher et al.

Farhangi et al. teach transmitting the encoded combined audio data stream at col. 7, lines 18-21 for further processing or handling and they implement a CODEC on the receiving end of the system.

6. Regarding claims 24-27, mixing the first audio data stream with a second audio data stream is taught by Farhangi et al. at Figure 2, col. 3, lines 9-67; col. 4, lines 1-61. Farhangi et al discloses receiving compressed data streams and decoding or deformatting the data streams into a raw format. Farhangi et al do not specifically teach that the raw format is linear pulse code modulated format. However, using linear pulse code modulation as a raw format for digital data is extremely well known and is commonly used in the art of speech and audio signal processing. Farhangi et al do not specifically teach the audio streams are combined using a linear pulse code modulated format. Alexander teaches digital data processing system and method, which allows

for mixing of PCM data (col. 8, lines 26-30), for the purpose for meeting the demand of increasingly sophisticated computer users for audio subsystems which produce high quality sound (col. 1, lines 51-53).

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to allow for PCM mixing as taught by Alexander et al, for the purpose of meeting the demand of increasingly sophisticated computer users for audio subsystems which produce high quality sound as suggested by Alexander et al.

Farhangi et al. teaches encoding the combined signals at Figure 2, element 296. However they do not specifically teach encoding the combined data in an AC-3 or MPEG format. Refer to Bergher et al. who teach that AC-3 and MPEG compress signals into streams that provide reduced transmission bandwidth or recording area without audibly degrading the perceived quality.

Therefore, it would have been obvious to one of ordinary skill at the time of invention to modify the system of Farhangi et al. to encode the combined signals in either an AC-3 or MPEG format for the purpose of compressing the signal to achieve reduced transmission bandwidth or recording area without degrading the audio quality as taught by Bergher et al.

Response to Arguments

7. Applicant's arguments filed January 14, 2005, have been fully considered but they are not persuasive.

Applicant argues neither Farhangi or Bergher suggests that the way to mix mixed format signals, one perceptual and one pulse code modulated, is to convert them both to pulse code

modulated, mix them, and then convert them to perceptual, and thus neither of the references "tell you what to do when you have two diverse streams and you want to create a mixed stream in perceptual format." In response, the Examiner argues Farhangi specifically teaches a method and an apparatus for digitally mixing multiple, audio signals having independent sources, sampling rates, and formats. Farhangi further teaches that prior to mixing, multiple audio input signals are converted to a common sampling rate before they are digitally mixed. The Examiner contends that the teachings of Farhangi and Bergher provides support and suggestions to mix multiple audio signals having independent sources, sampling rates and formats, to convert audio inputs (as needed) to the desired common format, and to encode the mixed signals.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angela A. Armstrong whose telephone number is 571-272-7598. The examiner can normally be reached on Monday-Thursday 11:30-8:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on 571-272-7602. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Angela A Armstrong
Examiner
Art Unit 2654

AAA
June 30, 2005

Angela A. Armstrong